THE AMERICAN ARCHITECT AND BUILDING NEWS.

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THE Washington National Monument Society have issued an appeal to the people of the United States, reminding them that the monument is not yet finished, and that the centennial year is a fitting one in which to provide for its completion. They appeal to ministers and Sunday-school superintendents to take up collections in aid of the monument, on the second Sunday of this month; and to the liberal and patriotic press to keep the appeal before the public. The monument, they say, "is now one hundred and seventy-four, and when completed will be four hundred and eighty-five feet high; a plain and simple obelisk, surrounded at the base with a stone terrace twenty-five feet high, and two hundred feet in diameter. The cost to finish it is estimated at half a million dollars." The report, by the way, which we quoted some time ago, that Mr. Winthrop was president of the society, proves to be incorrect.

As we have before said, we should be heartily glad to see a suitable monument to Washington finished. It is discreditable, that such a thing should have hung fire so long. The centennial year is especially appropriate for taking it in hand again; and it is fitting that it should be built by as general a subscription as possible. But we feel obliged to protest against the carrying out of the poor and meagre design of the present monument. A monolithic obelisk, a hundred feet high, solid and inaccessible, such as the Egyptians quarried and raised three or four thousand years ago, has a character of nobility, and tells a story of skilful and patient overcoming of very great difficulties, which is not out of keeping with the life of Washington. But an obelisk of four times the dimensions, painfully built up out of small stones, and hollowed into a chimney up which patriots may crawl like ants, representing neither power of conception nor special skill of execution, but only dollars and days' work, seems to us altogether beneath the occasion. Now that the monument has been unfinished and untouched for several years, when only a third of it is built, and when we are talking of resuming the work, — now is the time, to consider carefully whether it cannot be converted into something worthy of its purpose. It is a somewhat delicate matter, for those who succeed to the care of an undertaking begun at the cost of many inaccessible people, to change its character; but those who have control of the monument have, we presume, a lawful right to alter its form. We should be glad if the ultimate success which we hope for the Monument Association should be delayed till its managers see time and occasion to reconsider their design.

IT would seem that the metropolitan stone-workers have a hard time. It is not long since we noted the outrageous underhand violence of the derrick-men; and now it appears that the New York Association, which consists, as we understand it, of workmen, assumes not only to fix the market rate of wages, and by picketing and rattening to frighten away men who are not its members, which is a common enough pretension, but actually to amerce employers who venture to offer less wages than it ordains. One is inclined to think that there must have been a good deal of aggression on the part of the men, and concession from the employers, before things could have got to such a pass. Now the Brooklyn employers profess to be resolute, and we should say it was time. The trades-unions fail to secure the respect of the public, because their purpose is not defensive but aggressive, and their means are dishonorable. A fair fight to better themselves pecuniarily would command respect, and, if they were at a disadvantage, sympathy; any honorable effort to really improve their condition and their work would win favor and support. But, instead of these things, we have rattening and intimidation of their fellows, violence and destruction of property for their employers, and mean attempts to wring advantage from their momentary necessities, and a systematic effort to give as little work as possible for their wages, and to make that little as poor in quality as they can. These, happily, are not the objects of the majority of workmen; but they are the objects of the unions, so far as they let them be seen. It is not on their part an effort for justice, but a struggle for power. The community goes heartily with an effort for justice; but the struggle for power it distrusts, and, when it can, represses.

THE stone-cutters' strike in Brooklyn has developed some peculiarly aggressive features on the part of the workmen. According to an account in a late number of the New York *Times*, the trouble began with a workman named Warnock, who engaged to work for Mr. Bradley, a master stone-cutter in Brooklyn, by the piece, at the rates paid to his other workmen, who, like Warnock, were members of the New York Stone-Cutters' Association. When it came to his second pay-day, Warnock began to complain that his pay was insufficient, and to demand double. The official representative among the men of the Association, known as the shop-steward, persuaded Mr. Bradley to over-pay Warnock, lest he should make trouble by reporting at headquarters that all the men were working for wages below the standard of the Association; and Mr. Bradley accordingly paid him about fifty per cent more than his wages, at the same time requiring a receipt in full from him. Presently, however, Warnock betook himself to the Association, and returned with an order that Mr. Bradley should pay him the rest of his claim, and should also pay the Association a fine of one hundred dollars for having offered less than the wages fixed by the Association, or otherwise that his men should leave work at once. Mr. Bradley, unwilling to have his work stopped, adopted the ruse of giving his check for the hundred dollars, and then stopping payment of it, while he went to remonstrate with the Association through its president. The Association demanded immediate payment: Mr. Bradley refused, and, when his men were ordered to stop work, advertised for others, whereupon nearly half of his men returned, abandoning the Association, and new non-members supplied the place of the rest. Then the Brooklyn Stone-Cutters' Association, a body of employers, passed a resolution repudiating all connection with, or responsibility to, the New York Association; whereupon all their workmen except Mr. Bradley's struck at once, and have by persuasion and intimidation prevented others from taking their places.

THERE have been a great many magazine articles within a year or two, on house-building and house-furnishing, subjects which are just now attracting a great deal of attention. So far as we have seen, they have pretty much all been diluted essays by amateurs on thoughts of Ruskin or Pugin, or else rehashes of the ideas of Mr. Eastlake and kindred author-

ities. When we noticed, a few weeks ago, a paper by Mr. Holly in *Harper's Magazine* for May, which contained some pleasant designs for country-houses, that we presume to be his own, we hoped that, if an architect in good standing were to take these subjects in hand, he would have something of his own to say about them. The second paper, in the June number, however, proved to contain vague generalizations on common doctrines of color-decoration, based solely on the lately abandoned theories of the composition of light. These doctrines as set forth by writers on color, being founded on scientific theories which are now exploded, and not on artistic study of the æsthetic relations of color, have lost their foundation; and the work of constructing them is to be done again.

Now the third of Mr. Holly's papers has appeared in the July *Harper;* and an architect writes to call the attention of the *Nation* to the fact that it not only is essentially derived from Mr. Eastlake's work, but that it contains passages copied from it with but trifling variations, but unacknowledged; and that not merely in the essential parts of Mr. Holly's argument, but in matter of purely literary embellishment, which are unnecessary to the paper. Looking into the book, we are sorry to see that it is as the *Nation's* correspondent claims. No doubt the leading ideas of Mr. Eastlake's book are by this time common property. It is natural enough that professional writers such as have written in *Harper's* and *Scribner's* should confine themselves to making up for the public ideas which they collect at second hand in matters of design: they are not expected to have any other ideas on such subjects; and it is their vocation to appropriate. But for an architect, who is expected to have acquired ideas of his own, to go out of his way to imitate these writers, is supererogatory in itself; the appropriation of Mr. Eastlake's writing is simply piracy of the most discreditable kind. It appears also, that Mr. Holly has drawn on Messrs. Cox and Sons' catalogues for illustrations, without giving credit to them, though in several instances he does ascribe the designs to the artists who made them. It is difficult to believe that he expected to "convey" these illustrations without detection; it looks more like carelessness.

Two architectural "conferences" were held abroad last month, — the conference of English architects, invited by the Royal Institute; and the conference of the French *Société Centrale*, which is like the American Institute in its organization, and whose conferences therefore resemble our conventions. The chief ceremony at the English conference was the presentation of the royal gold medal to M. Duc, in pursuance of the vote which we have before mentioned. A paper on the history of the Institute was read by Mr. Eastlake, the secretary; and the rest of the conference, so far as appears from the English journals, was occupied with papers discussing the planning and construction of artisans' dwellings, with papers on Greek art by Messrs. Burgess and Pullan, and with visits to various buildings. Of the proceedings of the French conference, we have as yet heard nothing.

THE Belgians are holding an international exhibition which has not attracted as much attention, at least on this side the ocean, as its interest warrants; partly on account of its special character, and more on account of the engrossing importance of the Centennial. It has been called a hygienic exhibition, and is to show all kinds of devices for the support, rescue, and hygienic care of human and even animal life. It includes ten classes of exhibits. The first three classes comprise appliances for saving life, and preventing danger or alleviating injury, — first from fire, including apparatus for extinguishing fires; second, from water and in water; and, third, on roads and railways. The fourth class is of contrivances for assistance in time of war, for the transportation, housing, and relief of the sick and wounded. The fifth covers drainage, sewerage, public bathing, paving, the construction, lighting, and ventilation of public buildings, and whatever directly affects public health; and the sixth, means for averting the danger to life and health in industrial work. The seventh comprises domestic hygiene; the eighth, medicine, surgery, and pharmacy; the ninth, contrivances for improving the condition of the working classes, such as building societies, co-operative societies, libraries, technical schools, evening schools, and children's schools. The tenth class is for the protection and support of life in agriculture, both of men and animals, including food and accommodation for man and beast.

THE ARCHITECTURAL EXHIBITION AT THE CENTENNIAL.

GOVERNMENT ARCHITECTURE. — II.

OUR government architecture has always been somewhat conservative. New fashions have been slow in setting their mark on it. The English classic ran on well into this century. The Greek revival brought us in due time, but somewhat late, the Patent Office and the Treasury Building at Washington, and quite a brood of custom-houses here and there. The Capitol extension (of which, to be sure, the original structure made the style a foregone conclusion) and the new Treasury were going up at the time when the British Parliament Houses had set the seal to the new Gothic in England, and while the new Louvre was developing the newest phase of the modern French style. It was not till the end of Mr. Mullett's service as Supervising Architect, that the "French roof," which had pervaded the country for a score of years, first broke out on a government building in Washington, — on the new State Department. And, although Mr. Mullett in his vigorous and prolific career departed widely from the type of building which had been characteristic of the Supervising Architect's office up to his time, yet the most marked architectural movement of this century, the Gothic revival, which has been more and more strongly influencing the private architecture of the country for a generation past, had up to his resignation left absolutely no trace on the government work, all of which, except the Capitol and one or two department buildings at Washington, has for many years been under control of the Supervising Architect's office.

This conservative tendency is, on the whole, by no means to be deplored. It has given to Washington the one characteristic that makes it outwardly interesting, — the stately and elegant unity of its public buildings; and has made it still, in spite of the wild vulgarity of much of the conspicuous private work there, one of the most interesting towns in the country, instead of probably the ugliest. Although we cannot believe in the fitness of the style adopted for the real uses or true expression of the buildings, still, since it is in possession, we should prefer to have it unbroken rather than lose the effect of artistic unity which they give to the city. When we consider further by what untrained and unskilful hands the greater part of the architecture of the Government elsewhere has been designed, we may further congratulate ourselves that these hands were held to a reasonable conservatism, and did not commit themselves to the experiments in style to which our architects have been prone within some twenty years. The nondescript designs which the late Mr. Young and Major Bowman sent forth from the Supervising Architect's office, or bureau of construction, are a faint adumbration of what we might have suffered at more adventurous hands.

In view of this conservatism, the marked change in style which is shown by the drawings from the Supervising Architect's office which are to be seen at the Centennial becomes

particularly noticeable. These drawings are not shown with the others, in the general architectural exhibition in the annex to the Art Building, but are exhibited by themselves in a part of the Government Building. This is somewhat to be regretted, for the sake of the exhibition, as it is also that the foreign architectural drawings are separated, each display being put with the other parts of the fine-art exhibit of the country to which it belonged; but this was made necessary by the scheme of the exhibition. The work of the present Supervising Architect, Mr. Potter, is mostly of the new Gothic. To many non-professional people, especially those who are used to the quasi-classical character of our older government work, the new style will be likely to seem inappropriate; but it is to be remembered that the questions of expression and treatment are the principal ones, and are, unless in ecclesiastical architecture, pretty independent of style. Mr. Potter's use of Gothic is for the most part bold, broad, massive, and dignified, as becomes the design of the buildings of the State; and, it is only occasionally that he yields to what is naturally the besetting temptation of the style he chooses, — the sacrifice of dignity and simplicity of expression to picturesqueness.

Two of the largest designs of the late Supervising Architect, Mr. Mullett, shown in this exhibit, make a marked contrast to those of his successor. These are the new Philadelphia and Cincinnati Post-Offices, very large buildings, plain and rectangular in outline, rather monotonous in disposition, and necessarily altogether dependent for their effect on the character of their detail, which could not be shown by the drawings. With these are shown the original design by Mr. Mullett for the Chicago Post-Office, and the modified design prepared by Mr. Porter according to the order of the Secretary of the Treasury, which required the remodelling of the upper part of the façades. In our next number we hope to give our readers an opportunity of comparing these two designs for themselves.

Another supplementary design is that for the extension of the Boston Post-Office, which we have already published. Here the fact that the new and the old fronts cannot be seen together, gives opportunity for some variation in treatment; while the main ordonnance and leading lines of the present building are preserved. The bold arch which occupies the middle of the new façade is a noble feature, that makes an effective centre, and gives the building a commanding entrance, which it now lacks. We are inclined to ask whether it would not have been better to add a story resting upon the arch, so as to fill up the break in the central pavilion to the height of the main cornice, leaving the turrets free only above that level, which might, we think, add to the breadth and dignity of the façade. The diminution of the roof of the main pavilion, from the overpowering size of that on the Water-street front, is a decided gain. The high roofs of the turrets seem to crowd it somewhat; and there is danger that, from the square below, they will hide it, unless it is carried to an ungraceful height. The cloven angles of the pavilion and turret-roofs seem to us unfortunate, — unfavorable to dignity and breadth, and somewhat lacking in decision. It is not to be assumed, however, that, in carrying out a design of such magnitude, the architect will adhere to every detail of his first conception.

We have not left room enough to speak much in detail of the rest of Mr. Potter's designs. Two of them, the post-offices at Atlanta and at Memphis, are in a semi-classic style that will look much more at home in those Southern towns than would Gothic. The round-arched windows and arcades are distributed with Romanesque freedom; but the general character and treatment, the squareness of the masses and the horizontal members, are quite classical. These designs are simple and grave in character, well distributed and interesting, and altogether among the most successful. The picturesque design for the court-house and post-office at Nashville is not so happy in detail as in conception. The broad canopies that surmount the quintuple windows in the wings look eccentric, and are very inadequately supported by the pinnacles and corbelled shafts on which they rest, besides cutting through the cornices, and so breaking up the rather grand squareness of the corner masses. The central tower, with a good deal of elegance, is inadequate for these corner-masses; the group of pinnacles and balconies which belts it round is not yet quite satisfactorily harmonized. The triple porch is decidedly rich and effective.

One of the most attractive of the designs is that for the post-office at Evansville, Ind., a two-storied Gothic design of simple rectangular mass, with two slightly advancing wings connected in the first story by a very bold segmental pointed arcade (almost too bold); an effective grouping of windows, and a simple roof with well-designed dormers. It is picturesque, dignified, and elegant, a kind of design which should be very attractive with successful carrying out, but might easily suffer in execution if the large scale of the parts should tempt to any coarseness of detail.

The post-office at Auburn seems rather too picturesque; a group of apses, gables, and turrets, too complex and unquiet to seem appropriate to the uses of a government building. The buildings at Albany, Fall River, Grand Rapids, and Carrington, and the smaller ones at Dover and Helena, show a good variety in treatment of nearly invariable problems, and have each its points of interest, which we have not time to discuss.

It is a very severe test to have to furnish so many designs of buildings for almost identical purposes; and the Supervising Architect is to be congratulated on the variety and vigor, as well as the dignity and character, which his designs show. It should be added that the drawings, almost exclusively in pen and ink, are exceptionally good, both for thorough workmanship, and for spirit and freedom in handling, and in these respects set an excellent example to private practitioners.

ON CERTAIN PRINCIPLES OF IRON CONSTRUCTION.

READ AT THE EIGHTH ANNUAL CONVENTION, A. I. A., BY T. C. CLARKE, ASSOCIATE.

ONE of the marked characteristics of modern civilization is division of labor. This has extended from the crafts to the professions, — law, medicine, and that profession of scientific construction now divided into architecture and engineering.

Engineering is found to be a field too vast for any one man to cover; and specialties have arisen, forming distinct branches, such as hydraulic, railroad, and mining engineering. Within the last few years, another specialty, that of iron construction, has engrossed the attention of some able minds; and its progress and improvement have been very great.

It would be too much to expect of an architect, that, in addition to his own practice, he should become an expert in iron construction; and it would not be in accordance with the spirit of the age, that he should devote the time and attention that would be necessary, which he might better employ in his own special calling. Nevertheless it becomes every day more and more necessary that he should grasp and thoroughly comprehend certain general principles which govern construction in iron; which, if he does not understand and follow, he will increase the cost of his roofs and other iron structures.

1. The economic object to be aimed at is, that all parts of an iron structure shall be of uniform strength. An iron bridge or roof, like an iron chain, is no stronger than its weakest part. All iron in excess of this is superfluous, economically speaking. This is theoretically simple, but practically difficult to attain.

2. The weight of an iron roof or girder increases directly as the load to be carried, and inversely as the leverage. This leads to very important results. The strain upon the rafters and ties of a roof, and upon the upper and lower flanges of a girder, diminishes with the height or depth of that roof or girder. But, as the length of the rafters and intermediate bracing increases with the height, there must be an economic limit of height somewhere. This is found to be in roofs at one-quarter of their pitch or span, and in girders at from one-eighth to one-tenth of their span. For special

reasons it may be necessary to make a roof higher or lower than quarter-pitch, but in such cases it will take more iron to carry equal loads. For less heights than one-quarter pitch, the extra quantity of iron increases in a much faster ratio than it does when the height is greater than quarter-pitch. The same rule applies to girders; and it should be observed, that a shallow girder not only takes more material to give equal strength with a deep one, but it is never so stiff, and will deflect more, just as a 4″ x 12″ stick set on edge is stiffer than a 6″ x 8″ stick.

3. It is not economical practice to carry one girder or set of girders by another. All supporting members should bear directly on the walls, if possible. If this cannot be done, the main girders should be arranged so as to give as short spans as possible to the beams which they carry.

The application of this rule to roof-construction shows some remarkable results. If the principal trusses of a roof are placed fifteen feet apart, every purlin is a girder of fifteen feet span, and must be proportioned accordingly. But, if the principal trusses are placed thirty feet apart, the purlins have to be treated as girders of thirty feet span; and, owing to the law of leverage, the weight of iron in a girder increases not directly, but as the square of the span. Hence the thirty feet purlins will weigh four times as much as the fifteen feet do, and four times as much iron will be required in the principal trusses to carry them; and, as they are double the distance apart of the others, it will take just double the amount of iron in the roof. The greater amount of labor required to make the principal trusses, over that in the purlins, fixes practically the economic distance of the trusses at from twelve to fifteen feet apart. Other considerations may render greater distances desirable; but it will be at the expense of more iron.

In designing floors of rolled iron beams, the deeper the beams, the less iron will be required to support a given weight; that is to say, if they are placed at such distances apart, that the strain per square inch on their flanges is the same.

For example, a room fifty feet long and twenty-one feet wide may be spanned with equal strength as follows: —

12	10½	inch beams	4 ft. 2 in.	apart,	weighing	10,100 lbs.
10	12	"	" 5 "	"	"	9,300 "
5	15	"	" 10 "	"	"	7,000 "

so that the last arrangement costs the least. At present we know of no way of lightly and economically filling ten-feet spaces between beams.

The cost of fire-proof construction might be considerably diminished if greater depth could be given to the floors of buildings. It has been found that the most economical depth for a riveted beam built up of plates and angles is about one-tenth of its span. Rolled iron beams, such as are generally applied in fire-proof floors, are used about one-thirtieth of their span, and consequently take nearly three times as much iron as if they were made at their economical depth.

The most economical construction would be one of built beams, of a depth of not less than one-tenth of their span, placed at wide distances apart, and united by some light and strong system of arched work, such as buckle-plates, covered with concrete.

It should also be remembered that a beam loses a great portion of its strength (in some instances amounting to even half) unless it is prevented from springing sideways.

4. The most economical shape of roof that carries nothing but itself is an arch formed of a segment of a circle, and prevented from changing form by the tie-rods radiating from the centre of the chord of the arc. But as roofs of large span are generally required to carry dormers, ventilators, &c., the best form for such purpose is the ordinary trussed rafter roof.

The amount of iron in the main tie of a roof is increased by raising it above the horizontal line in the ratio of the secant of the angle of elevation above the horizontal.

An arched roof, like those of the New York Central, Boston and Providence, and Boston and Lowell Railway Stations, requires no more iron than a trussed roof of similar span resting on iron columns; but the cost of workmanship is rather greater.

5. Cast and wrought iron columns are often criticised by architects as not satisfying the eye on account of their slightness; and they are sometimes made large enough to support the required load, and then covered up with an outer casing designed for ornament alone. A little investigation will show us that this is not the true treatment of iron columns. A column whose length is over ten or twelve diameters fails by bending sideways like a beam under its load. Hence the strongest shape is a hollow circle where the material is equally distributed at the greatest distance from the centre, as this gives the largest possible diameter in every direction.

Suppose that twenty-eight square inches of section, in the shape of a solid round cast-iron column, eighteen feet long and six inches diameter, will carry a safe load of seventy tons.

By making that column hollow, and one inch thick, the outside diameter will be ten inches, the amount of metal will not be increased, and the safe load will now be one hundred and seventeen tons. Now divide the same amount of metal into four hollow columns of four inches outside diameter each. Place them on the corners of a square of sixteen to eighteen inches diameter, and put in two rows of connections, bracing the four all together firmly, and dividing the eighteen feet into three lengths of six feet each. They will now carry a safe load of one hundred and fifty tons, and we have got back to the mediæval arrangement of clustered shafts, which is both constructively and æsthetically the correct treatment of iron columns.

There is no doubt but that the hammer-beam roofs of the fourteenth and fifteenth centuries, which are so justly admired, might be reproduced in iron, with a treatment adapted to that material, and be made of much vaster dimensions and with grander effect than their wooden predecessors.

We must not lose courage because our iron architecture has not perfected itself in the brief time during which the iron age has existed. In some shapes it has done so. Our iron suspension bridge is as perfect in its way as a stone spire; and it is possible to conceive of an iron spire, rising above the clouds like an arrow in its flight, and eclipsing the glories even of Strasbourg and Cologne.

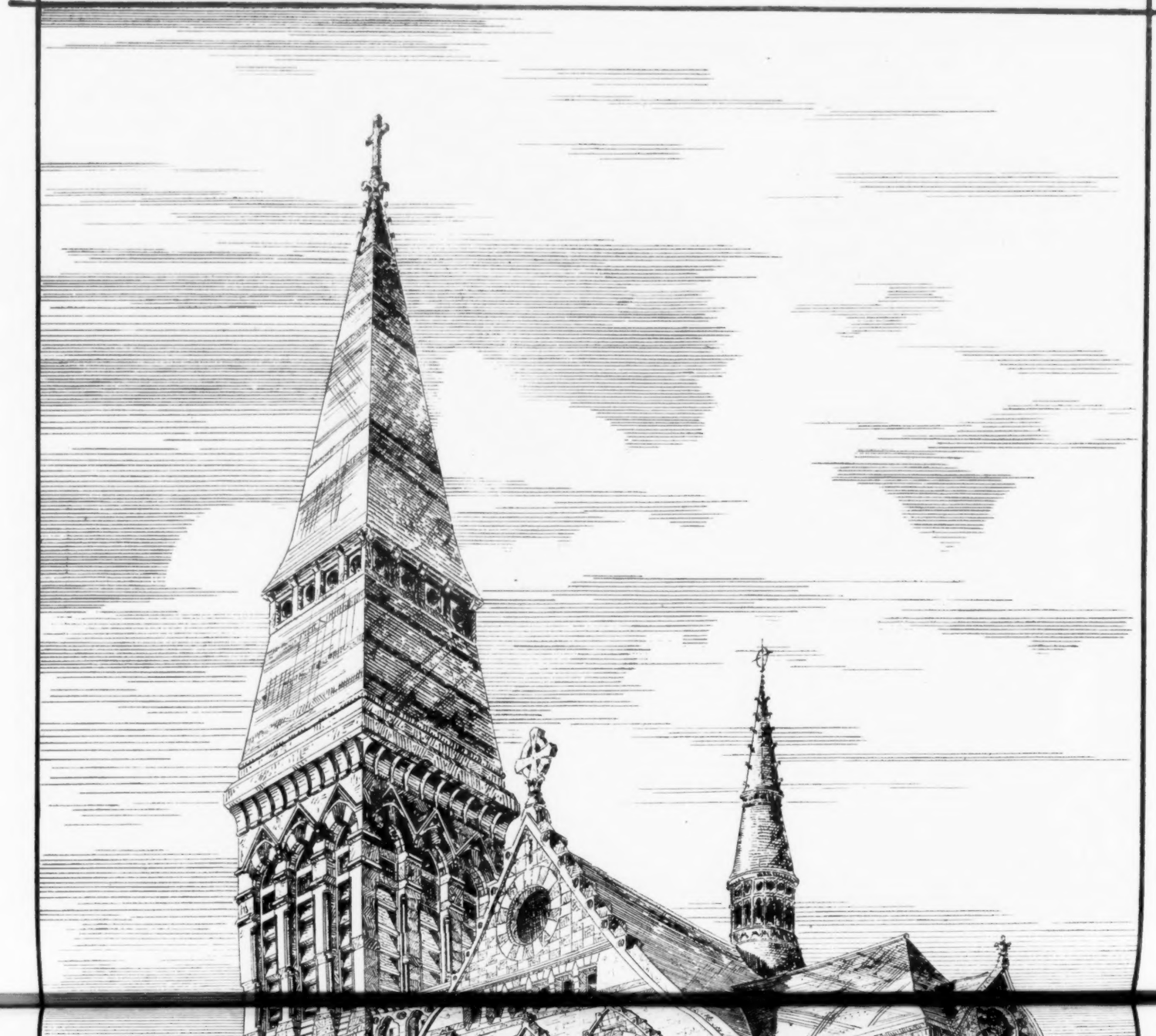
THE ILLUSTRATIONS.

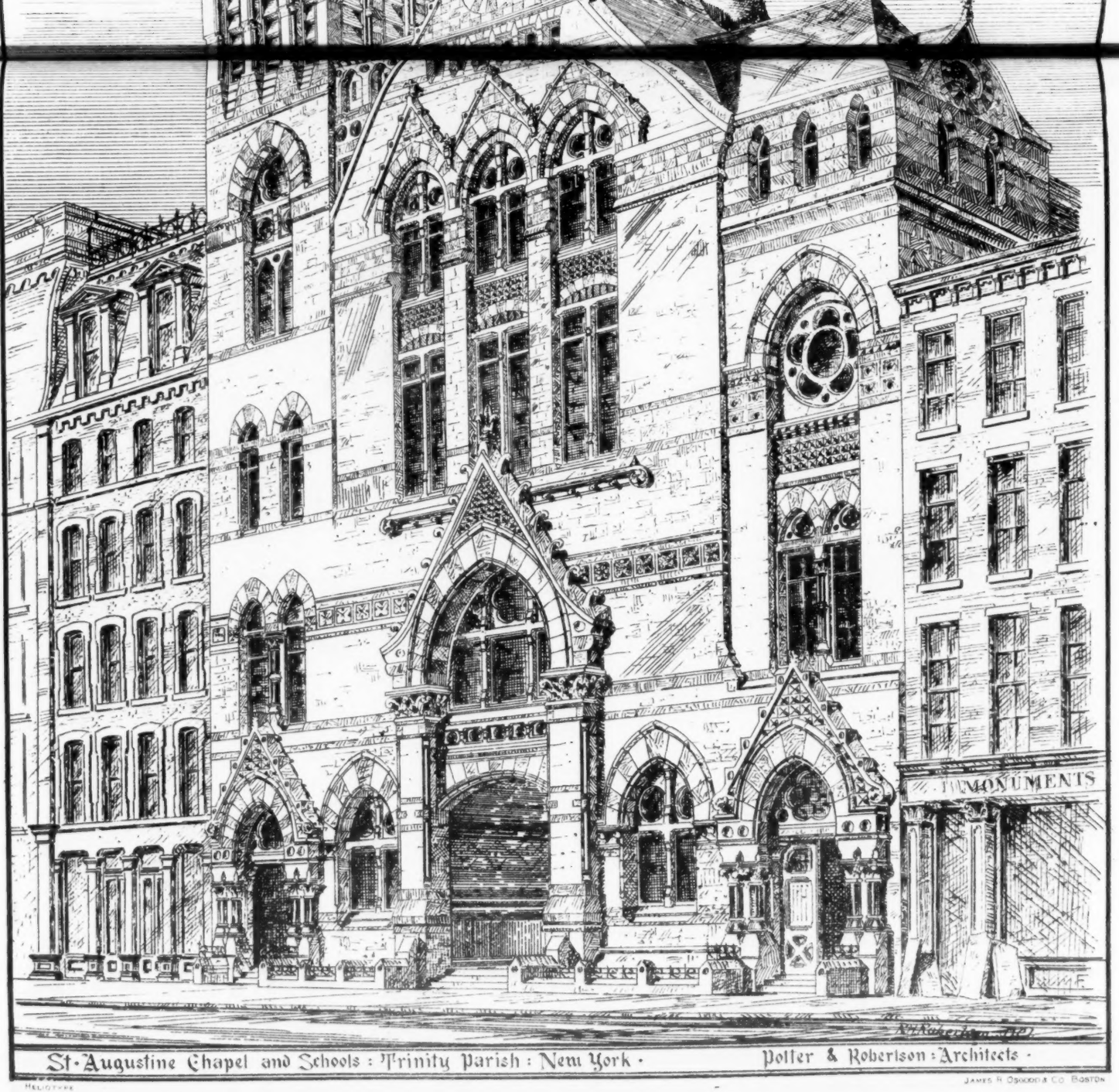
ST. AUGUSTINE CHAPEL AND SCHOOLS, TRINITY PARISH, NEW YORK. MESSRS. POTTER AND ROBERTSON, ARCHITECTS.

THIS building now in course of construction in Houston Street, near the Bowery, will, when completed, be used by Trinity Parish as a free chapel, Sunday school, and parish day-school. There are also arrangements and rooms provided for societies, lectures, etc. The frontage on Houston Street is 86 feet, the depth 225 feet. The height of the tower and spire is 215 feet. The chapel proper, which is situated in the rear, is arranged to seat 805 persons, without galleries, and has its main entrance through a large central doorway and passage 20 feet wide and 61 feet long. This passage it is proposed to treat with brick and stone lined walls, tile floor, and wooden ceiling; and to shut it off from the street by means of a heavy wrought-iron gate. Under the chapel in the rear, will be the Sunday-school department, which will accommodate over a thousand children. The front building, which is 86 x 66, will be used on the first story for night reading-rooms, clergyman's office, alms-rooms, etc. These rooms and those above in the front building are entered through passages 11 feet wide connecting with the two side porches. The second story of front building will be used as a lecture hall; the third story as parish school; the fourth story, as class-rooms, etc.; and the fifth story, as janitor's rooms and store-rooms. The side passages on first story run back and connect with large fire-proof stairways, by which access is gained to the various departments in the second, third, fourth, and fifth stories. The ashlar of front is to be of Longmeadow stone from Longmeadow near Springfield, and relieved with Newark, N.J., gray stone. The chapel walls in court in the rear will be faced with red and white brick relieved with Dorchester stone.

THE BEDFORD BUILDING, BOSTON, MASS. MESSRS. CUMMINGS AND SEARS, ARCHITECTS.

This is a business structure finished during the past winter for Messrs. Henry and Francis L. Lee, on Lincoln, Bedford, and Columbia Streets, Boston; the frontages being respectively 127, 148, and 110 feet, and the whole building covering between sixteen and seventeen thousand feet of land. It is divided into four large stores by party-walls running the entire height. Beyond a somewhat uncommon thoroughness of construction, there is nothing especially noticeable in the interior. The outside presents us with the first instance of the use of the red granite from St. George, N.B., a material which deserves to be more generally known. It is here used in connection with white Vermont marble on two fronts, and with red Philadelphia brick on the third; and it would perhaps be hard to say which combination is more pleasing in color. The granite is treated with a split or rock face in the basement, polished in the shafts of the first story columns and the two panels on the Lincoln-street front, and tooled elsewhere. All the capitals and other carved work are of marble. The building has cost about two hundred and sixty thousand dollars, or something over fifteen dollars per square foot.





St·Augustine Chapel and Schools : Trinity Parish : New York · Potter & Robertson : Architects ·

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APPLY TO
JOHN JEFFRIES, JR.
78 DEVONSHIRE STREET

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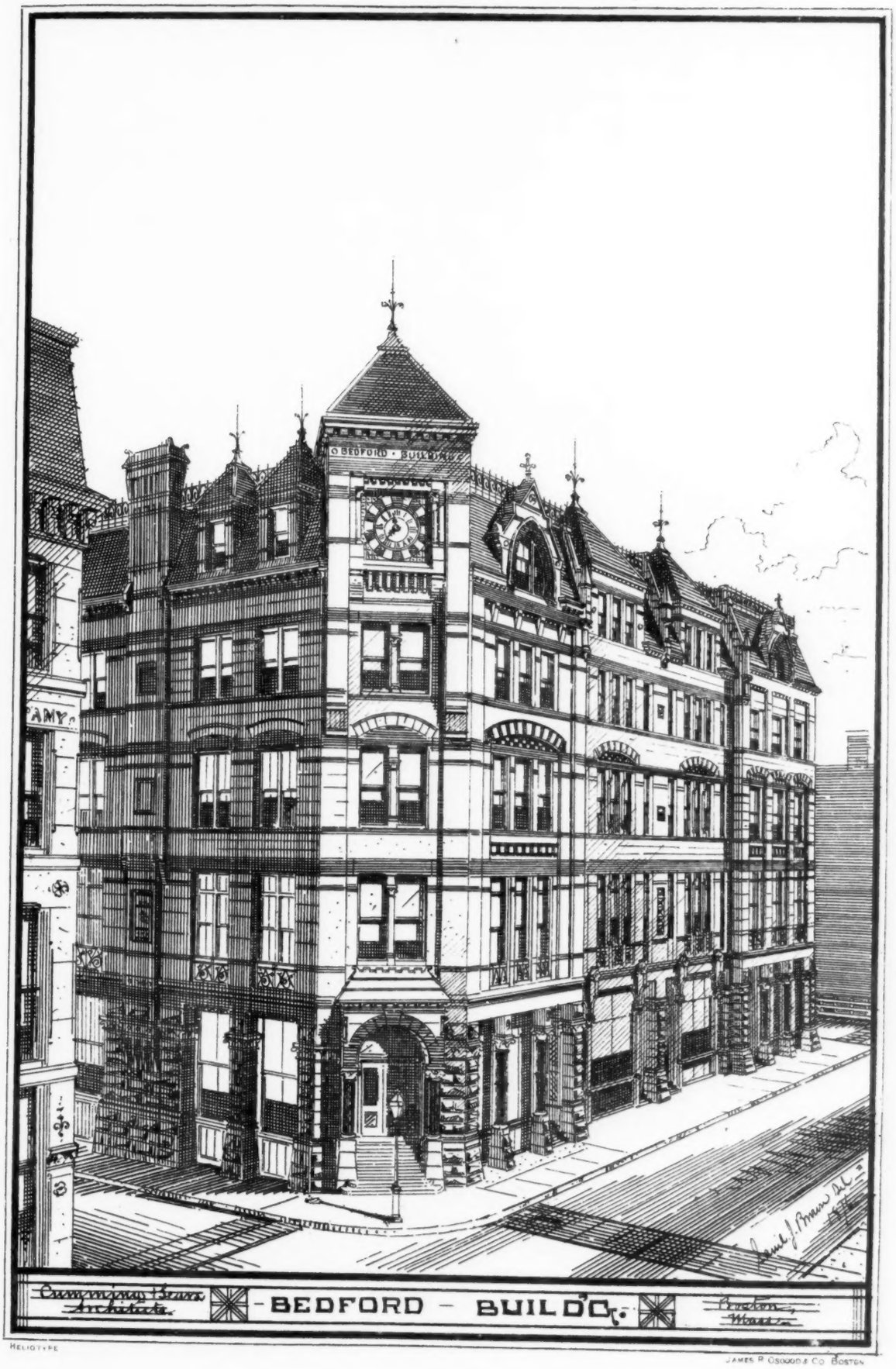
THE BEDFORD BUILDING, BOSTON.

ENTRANCE PORCH.

MESSRS. CUMMINGS AND SEARS, ARCHITECTS.



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ENTRANCE PORCH TO THE BEDFORD BUILDING.

CITY RESIDENCE. MESSRS. LAING AND FEHMER, ARCHITECTS.

THE FINE ARTS AT THE CENTENNIAL. — II.

THE only thoroughly creditable and representative collection of pictures from abroad is the English exhibit. The commission had a distinct and proper idea of what was necessary to make a fairly characteristic display of British art, and assembled a few score of pictures, which, while they do not include the best productions of this decade, mark very perfectly the standard of artistic excellence among English painters. The characteristics of this school, that distinguish it from all others, are not difficult to define. First of all, in its tendencies it is pure and high minded and always full of sentiment. There are few disciples of the school, who, in the eyes of the devotees to *technique*, would be judged skilful manipulators; yet there is such a notable predominence of the æsthetic over the material element that even the painters must always recognize the artists. The other characteristics of the school are a distinguished aptness for the selection of subjects, a direct and comprehensive way of telling a story, and a power of expression that is much deeper and better grounded than appears at first sight. There is little of the dramatic in English art; but, whenever there is any, it is always legitimate. The walls of the exhibition-rooms do not blaze with masses of nude flesh and startling effects, but are quiet, sober, almost domestic in aspect. The individual pictures attract from their sympathetic motives, and wealth of human interest: they are not designed to startle a crowd of curious gazers into forgetting the subject in the glare and effrontery of the execution. The intimacy of the pictures is one of their greatest charms. To enjoy them, one must make friends with them, and live with them. Whether the multiplicity of theories, the flavor of old academic training, or the rather formal and constrained methods of study among the beginners in the profession, is the most to blame for the uncertainty and indecision of handling and general weakness of *technique*, may not be discussed here. Certain it is, that Englishmen rarely attain the facility of execution that is common across the Channel; but it is equally certain, that whatever they have to say they succeed in saying with a sympathetic strength and earnestness that more than overbalances their prominent weaknesses, and thus fulfils the highest purposes of art.

The Queen's collection and the loan pictures of the National Gallery are too well known to require special mention. The principal interest in this part of the display consists in discovering the originals to familiar engravings, although many of these works merit faithful study. The modern portraits show a great advance in truthfulness, and have quite a decided originality. W. W. Ouless's two portraits of gentlemen are frank, well drawn, and sculpturesquely modelled, with a suspicion of dryness in the execution. J. E. Millais is represented by only one example, and that, unfortunately, by no means a strong one. If he were to be judged by this portrait of a little girl, his fair reputation would suffer; for the painting has little to recommend it. With a more tender appreciation of character than Ouless, a more delicate feeling for tone, and a less marked solidity and sculpturesqueness, G. F. Watts has painted the portraits of Millais and Leighton, both strong studies of character. The "Egyptian Slinger" of the latter is not quite up to the situation: a figure in dark warm tone against a twilight sky, a little more than an academy model, much less than a wiry native of the Valley of the Nile, makes the spectator conscious of the skill of the artist, and not altogether sure of his sincerity. "The Summer Moon," two beautiful women asleep in the strong moonlight, is an idyl of the harvest month full of classical grace; and the study of an interior of a Jew's house in Damascus shows how far the vision of the artist reaches beyond the commonplace aspects of nature, and chooses the most enticing beauties to represent. The figures in their quiet dignity are like classical statuettes; and there is no effort at formal arrangement. The color is as delicate as the interior of a shell. While Leighton gives us the side of the shield we sometimes think we see, and know it is one of the supreme moments of our lives, S. Luke Fildes brings us to earth again by his vividly realistic study of weak humanity with all its misery, wretchedness, and vice, in his "Casual Ward." The effect of the grizzly, sloppy evening, the well-studied character of the rank of shivering wretches awaiting their turn at the hands of the policeman, the individual expression, action, and type, the appropriateness of the scale of color, and positive handling, make this one of the most complete and impressive pictures in the collection. Fildes' "Betty" is as full of freshness and sunshine as the first picture is dismal and forlorn; and one may not easily forget the honest, saucy face of the milkmaid, as she trips over the field to her milking, with her bucket and stool, gathering daisies on the way. The English *genre* painters are conscientiously national in their ideas: rarely enough are motives sought from foreign sources. To be sure, the wonder is not so much that they should paint what they see about them, since in this way the greatest lights of the profession have grown; but that, in these days of easy travel, the more easily found picturesqueness of other countries should not prove a greater temptation. H. S. Mark's "Three Jolly Post-Boys" is a good example of the light *genre*, in agreeable contrast with Fildes' serious study, Faed's well-known "God's Acre" and others of like sad feeling, and F. Holl's funeral pictures. The latter is called the funeral painter of England, and has a well-earned reputation for faithful representation of scenes of domestic grief. His pictures are sad enough to satisfy the most morbid mourner. The types are well founded, and the expression admirably rendered. In their rather positive realism, the pictures have not the subtle charm of Israel's works nor their sympathetic tones. Holl has, however, the advantage of being much more even than the Dutch funeral painter. Orchardson's and Pettie's contributions, "Prince Henry, Poins, and Falstaff," and "Touchstone and Audrey," are familiar by engravings, also Breton Riviere's "Circe" and "War Time." Two other great figures in the first rank of artists in London are Alma Tadema and G. N. Boughton. The latter only can be said to belong to the English school. Although American by birth, his best pictures are strongly Anglican. There is something of the quaintness of the early Flemish painters in the large picture with pilgrims drinking water from the jugs of the girls at the well. Alma Tadema is a native of Holland, a graduate of the Antwerp Academy of Fine Arts, and for many years a resident of London. He has never lost his early received traditions; and as a colorist and a manipulator he is without a parallel. The most important of his pictures is his "Vintage Festival," already quite popular in the engraving. This gives little idea of his real power as a painter: it only testifies to his unique skill in the management of colors, and to his knowledge of archæology.

In landscape the glowing canvases of Vicat Cole, and Peter Graham's strongly effective "Wind," a rushing torrent with rugged mountains and storm-clouds, are worthy careful inspection. But the climax of realism is John Brett's "Amongst the Granite Bowlders," a seacoast study with positively *naïve* imitation of the purple bowlders, the simply colored sand, the crisp rollers, and the hazy sky. It is like putting a frame around a view from the window of a seaside cottage; and the only drawback is the fact that it tells its whole story at the first glance, and after a while it would seem to be a relief to have the clouds drop, and break the glassy rollers and the brittle bowlders into fragments: still the artist has courageously, even nobly, worked out his feeling. The landscapes, indeed, are not numerous: some very good ones are found among the water-colors. Jopling's "Flossy," a portrait of a little girl in a rocking-chair, is the most interesting figure in the latter class of painting. The black and white department, and the exhibit of the South Kensington Museum, are entertaining and instructive. In this brief review of some of the notable pictures in the English department, some slight idea may have been conveyed of the influences the association with these artists would have on the art-student. London is in many respects an admirable centre for the study of art. But the growth of the student is slow there. He cannot follow the system of education, and acquire an early confidence in himself. There is little dash and frankness in the average English works: the drawing in general lacks vigor and breadth. It would be unfair to the student, to point out to him the English collection of pictures, and say that he is to take his lesson from them, and study in that school; for the other nations are too feebly represented to form a judgment of their strength in art. London is unquestionably an excellent place to finish in; when the picture-making stage is reached, the student may go there with great advantage, for the models are the best in the world, the drawing-classes numerous and open, the best examples of modern and ancient art are before him, and his artist associates are as a rule earnest workers and conscientious students. For the rudiments of the profession, the Continental schools are still the best; for their methods are practical and direct.

LIGHTNING-CONDUCTORS. — An exchange says, "Three bushels of broken coke packed round the bottom of a lightning-rod in a hole or surface-trench five inches in diameter and twenty feet long, affords an earth contact of not less than twelve hundred square yards, which is ample for all practical purposes.

REPORT OF MEETING A. I. A.

BOSTON CHAPTER.

THE Boston Chapter, A. I. A., held its last meeting for the season on Friday evening, June 2, at the Institute of Technology.

The meetings of the season have been characterized by a new feature; namely, the discussion of various important buildings recently erected in this neighborhood. We printed a report of the February meeting, at which the first of these discussions took place, the subject then being the Old South Church. At the meetings in April, May, and June, this series has been continued, with the Alumni Hall at Cambridge, the discussion of which was introduced by Mr. Cummings and Mr. Sturgis, and participated in by a large number of the members present; the Brookline Town Hall, when the discussion was opened by Mr. Hartwell and Mr. Ware; and the Museum of Fine Arts, introduced by Mr. Tilden alone, in the absence of his coadjutor Mr. Thayer. These discussions have been marked by great frankness and good feeling on all sides; and any fears or misgivings with respect to their success, founded on the presumed sensitiveness of architects to criticism, must have been dissipated by the result.

At the May meeting, held at the house of the president at Brookline, the subject of the contest now going on between the architect of the new State Capitol at Albany, and the Advisory Board appointed to examine and report on the condition of the building, etc., was brought up by the reading of a letter from the Albany Chapter, in which the Boston society was requested to protest in form against the adoption of the design prepared by the Advisory Board for the completion of the building. After a considerable discussion, in which some diversity of opinion was expressed as to the propriety of this society taking a part in the controversy, a committee was appointed to prepare a communication addressed to those members of the Advisory Board who are members of the Institute, representing to them the delicacy of the task on which they had entered, and enjoining caution in the execution of it. At the June meeting, this committee reported that after mature consideration of the subject they had been unable to see how such a communication could be framed without danger of offence; and they begged to be discharged. And they were accordingly on motion discharged.

At the June meeting also, Mr. H. P. Clark was elected a Fellow.

THE ROGERS PATENT BUILDING.

THE advantages that a portable house has over the ordinary frame house are, that it is cheaper, since it usually is a mere wooden shell; wall-plastering, ceilings, and all but the simplest inside finish, being out of keeping with the style of the house: it can be built on sites where the ordinary building-operations could not be carried on: it can be built rapidly, and occupied immediately on its completion, as there is no damp plastering to threaten malarial fever. On the other hand, its lightness exposes it to a great strain from the effects of weather; the thinness of the walls renders the house warm in summer, cold in winter, and renders privity and quiet impossible. Still for seaside houses, hospitals, workshops, hunting lodges, bath-houses, barns, sheds, etc., this species of building answers as well as, perhaps better than, any other.

The peculiarity of the Rogers method is not so much that the building is hooked together, for other patentees use this device; but that the planks are stiffened laterally by bolts. All stuff employed in the building is plank, varying from one inch and a quarter to two inches in thickness, and iron bolts three-eighths and one-half of an inch in diameter.

If we go into the details of the construction, we find that the sections are each composed of six planks four inches wide, grooved and tongued together with iron tongues one-sixteenth of an inch thick, and bolted together by long bolts placed at intervals of about four feet. These sections are bolted together by shorter bolts. The reader can easily perceive how the connecting bolts are introduced into the sixth plank before it is itself bolted to the others of the section. In this way a wall, a floor, or a roof, becomes a homogeneous surface. To connect an upper floor with the walls of the building, connecting bolts three-eighths of an inch in diameter, extending through the breadth of two planks, are placed at intervals of thirty-two inches, and are only two inches from the inner face of the wall. Hooked to these bolts at right angles to them, and fastened on the outside of the wall by nuts, are anchor bolts of one-half inch iron. In this lies one of the weaknesses of the system, since the floor depends on these anchor bolts for its support; and the fibre of the floor planks running in the same direction as the bolt make it not unlikely that the floor may be torn partly away from the bolts. Another weak point in the system is the practice of securing the walls to the sills by means of common wood screws four and one-half inches long, and placed at intervals of about three feet. Any inequality in the foundation would bring a strain on these screws that they could not withstand; and their giving away would bring an unforeseen strain on other parts of the building; moreover, the lower end of the wall planking is more exposed to rot than any other part.

The two sides of the roof, which are constructed in the same way as the walls and floors, are secured together at the ridge by open links shaped like hames-links (Fig. 1), which at intervals of two feet or so are slipped over bolt-ends which project from the corresponding edges of the roof planks. The lower portion of the roof gets its bearing upon a triangular plate resting upon the upper floor; to prevent the sliding of the roof upon the inclined surface of this plate, it is tongued to it by an iron tongue, while the roof is secured to the body of the house by an open triangular link (Fig. 2). Another method is shown by Fig. 3. In order that the want of rafters and floor-joists may not cause roof or floor to sag, tension rods or light trusses of five-eighths inch iron are placed at intervals on the under side of the roof and floors where the bearing is great enough to demand them. All joints are covered by battens. Bolt-heads, where appearing on the outside of the building, are covered by belts or by ornamental rosettes.

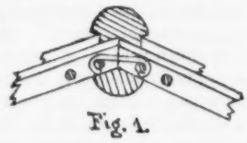

Fig. 1.

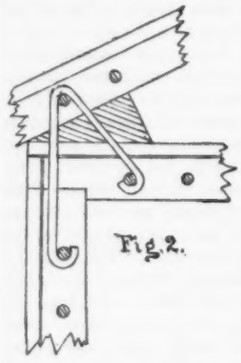

Fig. 2.

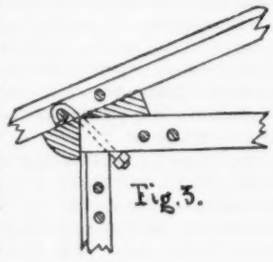

Fig. 3.

Take it all in all, this seems to be a very clever method of putting together rapidly a building, where the builder can be contented with such shapes, sizes, and arrangements as the patentee keeps in stock. The schedule shows the cost of materials and labor for one hundred square feet of wall or floor of Rogers's Patent Building, reckoning lumber at fifty dollars per thousand, to be $12.63.

A WORD WITH CLIENTS. — I.

WHILST it is conceded that the architecture of the present day is better than that of the last century, we must own that it is susceptible of improvement. The dead level of that period has given place to a greater activity; and, instead of the monotony that once characterized the efforts of the profession, the reproduction of Greek temples in all sorts of materials and for every conceivable purpose has given place to the greatest diversity in designs, perpetrated for the sole purpose of catching the eye and winning renown. That the architects are at fault in this, we cannot deny; but they are not alone responsible for the crudities that take shape under their hands. It is the client who is really to blame, in a majority of cases, for giving birth to these monstrosities; but it is the architect whose name is associated with them, and who has to bear the odium.

Some one has said that nearly every man thinks he knows something about both building and finance. It is true, but the views of the wiseacre are not equally strong on both subjects; for, while he hesitates to invest his money without the advice of those who are more experienced in such matters, he never questions his ability either to plan a house or to criticise a design. If he has sickness in his family, he does not presume to advise his physician as to the proper mode of treatment; nor would he feel warranted in suggesting to his lawyer how to carry on an important suit; but, when it comes to house-building, that is a wholly different thing There he feels at home, and will have every thing his own way. In his eyes the architect is but little more than a draughtsman employed to carry out his client's views, and not to thwart him with

suggestions of his own. The architect has to win his bread in a field in which there are many competitors; and, whilst he is prompted at almost every step to rebel, he curbs his indignation, and resolves to give the best possible shape to the crudities — I might say absurdities — of his would-be instructor.

The best clients are those who have in their mind an ideal house, which they wish, with the assistance of an architect, to put into a tangible shape. One who has given the subject thought can easily describe the arrangement of rooms that would best please him, and what adjuncts seem to him indispensable; and if he has a partiality for any particular style, Gothic (early or late), classic, or Queen Anne, the architect would be glad to know it. With this information before him, and knowing what the client would be willing to spend on the house, the architect can work understandingly; and we may rest assured he will perpetrate nothing that will be in violation of good taste. When I say this, it is presumed that the architect is in good standing. There are empirics in architecture as there are quacks in medicine; and one should no more employ an architect, than he would employ a physician, without knowing something of his standing from others.

Architects are enthusiasts: they love their profession, and adopt it from choice; not only expecting to live by it, but hoping through their calling to help others. To succeed, one must not only have a taste for the profession, but also a leaning to the mechanical arts, must be fond of construction; and as a boy loves to watch the carpenter at his bench, the turner at his lathe, and the smith at his forge, he instinctively catches and retains the peculiarities of all the callings with which he is brought in contact; and, when he sets about the mastery of his own profession, he is already well up in the subordinate branches. He may not have the dexterity of the apprentice who has already learned to handle his tools; but, of the two, he has probably given the most thought to the work of the latter, and is the best fitted to criticise it when it is done. No plodder can make an architect; no youth who confines his studies to office hours, who is not fond of books, who does not thirst to know all that has been done before him, and all that others are doing, can rise to any position worthy of the name of architect. The work of an architect is never done, for he can never reach the goal of his ambition. Gratified to find that he has accomplished so much, yet fully aware that the standard to which he would attain has not been reached, the hours that many give to relaxation are devoted to thought, often to the severest study and the closest investigation. How galling, then, must it be to one full of enthusiasm, ready to give his client his best, and ambitious to excel, — how galling, I say, must it be to such an one, to be called upon to construct that which will be in violation of the simplest rules of his profession, to be asked to put up and then father the crudities that even the owner will be ashamed of when they are criticised by his better-informed friends! Men who ask these things are as set in their views as they are ignorant of the laws of harmony and proportion. "I don't know any thing about painting," says Jones, "but I do know what a house should be; and I'll have my own as I want it, or not at all." The client has it as he wants it, for the architect is powerless. "Powerless?" say you? Ay, powerless! for his arguments are thrown away on one who thinks he is the better informed of the two; his efforts to lead his client into other channels are wasted; and he sees to-day, as he has seen before, and as he will see again, that he must go on with the work as laid out, or retire from it altogether. Were it only occasionally that he is exposed to trials like this, it would be extraordinary if he did not throw up the pencil at such times; but, unfortunately, they are of constant occurrence; and the necessities of the case, the voice of his little ones looking to him for support, force him to choke down the feeling that is uppermost, and begin the work, which will be worse than drudgery to him from beginning to end.

When will the world learn the truth of the adage, "He who would be his own architect will have a fool for a client"? He who would trammel his architect after he has given him his general instructions, would so dictate to him that the work when completed must of necessity be a hodge-podge, is as unwise as he who calls in no professional aid. Nay, of the two, the latter does the least mischief; for he only holds up to the world the evidence of his own folly, instead of shifting the load in great part to the shoulders of another.

OLYMPIA. — The last piece of sculpture found at Olympia before suspending work for the season was a metope tablet, much broken, the figures on which are supposed to represent Hercules bringing Cerberus from the lower regions.

FIRE-PROOF BUILDING.

SPRINGFIELD.

EDITOR AMERICAN ARCHITECT AND BUILDING NEWS.

WE are not desirous of advertising ourselves in any but the ordinary, legitimate channels; but there are some matters, connected with private business, in which the public have a deep interest. Such an one is the question, "How shall we build to prevent conflagrations?"

In your issue of June 17, Mr. P. B. Wight has begun an article upon this subject, in the which he seems to argue that attempts to make fully fire-proof buildings in the midst of buildings not so are unwise, and to be discouraged; because, first, it costs so much to do it, and, second, it can't be done (i.e., made fire-proof). Now, we hold the converse of this proposition and its two reasons. It is not unwise to erect such occasional buildings even at large expense, and, among others, for these reasons: —

1. The cost, when they are properly constructed, is *not* such as to deter any man who studies to invest on business principles.

2. There is no difficulty in accomplishing the end sought.

Now, these statements are to be proved by facts; and we therefore do not propose to argue the matter, but merely to refer to the two cases mentioned by Mr. Wight, and to bring out the facts so that they show their true bearings, which we are happy to say are on our side. Mr. Wight says, "Experience has shown that such a building must be a veritable fortress against fire. . . . I can refer to but one that has thus far stood the practical test, and that included only part of a structure. It was during the Chicago fire of 1871, when the strong-room of the Fidelity Safe Deposit Company was preserved, the proof of which was, that a Newfoundland dog came out of it alive after the fire." Now, the above will be better understood when we explain that the "strong-room" was one story of an old two and a half or three story brick house remodelled in the first story for this purpose; the first floor and the ceiling over it, or the second floor, being made in our method (I-beams, corrugated iron arches, and concrete), and the rest of the building remaining quite subject to any fire that might occur. This could hardly be termed a "veritable fortress" except in the fact that it *did* resist fire. There was nothing expensive about it; and yet our photographs taken the week after the fire, when business had been resumed in that room, show that the floors were a full protection, although at the time, as we saw ourselves, the *débris* of the old Sherman House lay on the upper floor.

Again, Mr. Wight speaking of a class of buildings says, "Of all the number that lay in the path of the fire, only two stories of one building, the First National Bank, were saved; and that happened to be advantageously located, with its back as it were composed of two party-walls toward the advancing fires." In regard to this building, Mr. Wight has been somewhat misinformed; and so his conclusions are not exactly those which we reach. There was fire enough evidently, as hardly a vestige of any other building was left for thousands of feet. The *four* floors of this building which had our floors were but little damaged; and that little *only* because the "two party-walls" were good for nothing, and fell, of course carrying away that portion of the floor resting on them. The president of the bank wrote us a few days after the fire, that the floors were "equal to the emergency, failing only where the walls were defective. . . . A large portion of our floors are uninjured." But beyond this Mr. Wight quite forgets the Tribune Building, around which the flames played in their hottest might. This building, it is evident to all who have examined it, would have stood entire had it not been for an explosion of certain material in one of its stories, which cut a clean rift through the building, letting down the roof, and tearing away a part of the floors. Yet the editor wrote us that "more than half of the floors were still good, needing only a coat of paint to make them equal to new."

Again, one wing of the City Hall remained (in a damaged state) for many months after the fire; and business was done in the building daily. The floors did their part thoroughly; and it is well known in Chicago, that, had the other parts been as good, the whole thing would have been well preserved. Now, we have written the above for just this reason. These were *all* the buildings of our method in Chicago. All were in the path of the fire, and all in a greater or less degree preserved after the fire. No other buildings in that path were preserved in *any* degree. The inference is unavoidable, that any building with proper walls, and our roof and floors, will stand fire although surrounded by other and combustible buildings. The experiences of the last few years have taught builders how to make proper walls. They have also taught us how to greatly improve on what was even then fireproof, and is now palpably and clearly so. Therefore it is not unwise to put

up such buildings, even though the surroundings are not good. Finally the cost of such buildings is not largely in excess of the ordinary cost of construction. In proof of which, and our continued regard for Mr. Wight from olden times, we shall be happy to submit to him construction plans and estimates for the next general building he may have to put up.

We ought to say that we thoroughly agree with Mr. Wight in regard to exterior protection. The large fire at Springfield last summer, which at one time threatened the total destruction of the place, was stopped and held solely by a large brick building whose windows were protected by our shutters. It is fully admitted, that, had those shutters failed when the flames blew against them in a twenty-seven mile gale, the major portion of the business buildings of Springfield would have been destroyed.

We submit, then, that architects do not need to go backward.

Very truly,

GEORGE DWIGHT, JUN., & CO.

NOTES AND CLIPPINGS.

THE PROPOSED LIBRARY AT WASHINGTON. — One plan for the new library is described as surpassing in beauty the Capitol itself. The dome of this drawing somewhat resembles that of St. Peter's at Rome, while the Gothic style of architecture of the main building, with its innumerable minarets, suggests the Cathedral of Milan.

FALL OF BUILDINGS. — At St. Louis, on June 18, an old building fell, burying seventeen inmates, none of whom were killed.

At Jordan, Scott County, Minn., on June 19, roof-timbers were being put in place on a brick building, the walls of which were green, when one of the timbers was accidentally dropped upon those already placed, and the walls fell, burying nine workmen, two of whom were instantly killed, and seven were badly injured. The owner of the building, and a St. Paul contractor whose men were putting on the roof, were at the top of the walls (thirty-three feet high) at the time, but were not seriously hurt. In fact, all the men at the top of the building escaped with no greater injury than severe bruises.

At Cincinnati, on June 23, a large frame building which was being built in a notoriously careless manner was blown down during a severe gale, — it had been partially blown down six weeks before, — burying seven or eight men in its ruins, none of whom were killed.

In Nevada, when a building falls, and kills two or three people, the jury first hunt up the contractor, and hang him, and then bring in a verdict that nobody is to blame but the contractor, who cannot be found.

CHICAGO. — Work on the Chicago Custom House has stopped, because the iron-work for the upper stories and roof is not ready.

DAMAGE BY LIGHTNING. — On the afternoon of June 27, the top of Rollstone Church, Fitchburg, spire was knocked off by lightning, part of the large ball crashing through the roof.

NARROW ESCAPE. — The Lewiston (Me.) *Journal* says, "Between the hours of nine and ten o'clock sabbath morning, without any warning whatever, the whole upper ceiling of Temperance Hall (estimated at over six tons weight) came down with a fearful crash, crushing settees, chairs, tables, and other furniture in the hall. The janitor and assistant were sweeping on the floor; and at a certain period of their work one suggested to the other to proceed to the hallway at the head of the stairs, and sweep that first. Just as they both crossed the threshold of the door, the fearful accident happened."

BURSTING OF A TANK. — The New York *Times* says that early on the morning of the 24th ult. a stream of Croton water was turned into the large circular tank of the New York Aquarium, corner of Broadway and Thirty-fifth Street, for the purpose of testing it. This tank, the same in which the two white whales were placed some weeks ago, had never been filled before, — sufficient water only having been put in it on that occasion to keep the whales alive. It was twenty-five feet in diameter, and about six and a half feet deep, holding when full from sixty thousand to sixty-five thousand gallons. The bottom was of brick, covered with Roman cement; and the sides for about two feet upward were of the same material, on which rested a heavy framework of iron in which were set plates of polished glass two feet wide by four feet long and half an inch thick. Just at noon, when the water had reached to within six inches of the top, and orders had been given to turn it off, a loud crash was heard, and about one-fourth of the wall or side of the structure gave way, flooding the whole of the space about it. One of the workmen, who was in the act of turning off a waste-cock at the base of the wall where the break occurred, was struck with the fragments, and thrown violently forward, receiving serious injuries about the hips and body. Two other workmen were also severely hurt, and with the first-mentioned were sent to Bellevue Hospital for treatment. Several others were slightly injured, including Mr. B. A. Ogden, the architect, who was superintending the operation. Mr. L. J. Harper, the agent of the concern, said last night that he could form no idea of the amount of damage done.

PROTECTING ST. PAUL'S. — Mr. Philip Brannon states that, in applying his patent stone felt to the timbers in the dome of St. Paul's, a space was in most cases left between it and the surface of the timber for the better preservation of the wood; and only where such an arrangement would prove unsightly or too bulky had the felt been applied to the wood itself.

FOREIGN PERIODICALS. — The *Building News* for June 16 is unusually uninteresting. What little there is in it of value, as also most of what is to be found in the *Builder*, can also be found in the *Architect* for June 17, which is issued with a supplement of twenty-eight pages, containing an account of the proceedings at the General Conference of Architects held in London in June.

A TRUISM. — It is dangerous for any branch of art to be placed at the random discretion of possibly unskilful judges; but this is a danger to which some forms of art must be prepared, however unwillingly, to submit. Poetry or painting, or even sculpture, can keep clear of it. Architecture has no such choice. The material in which the architect works is very costly, and far beyond what his own private resources can supply. He is thus essentially a creature of patronage, since on no other terms can he obtain the means of exercising his art at all. — *London Daily Times.*

CITY ARCHITECT'S SALARY. — The salary of the London City Architect has been raised from fifteen hundred to two thousand pounds per year.

M. J. L. DUC. — At the closing meeting of the Royal Institute of British Architects, held June 12, M. Duc received in person the Royal Gold Medal.

RENDLE'S SYSTEM OF GLAZING. — The King of the Belgians, convinced of the practical utility of this invention by the rapidity and precision with which a number of panes of glass were set and unset by some perfectly unskilled workmen, has determined to adopt this system for the glazing of the royal buildings in Belgium.

MR. MATTHEW NOBLE. — The death of Mr. Matthew Noble, a well-known English sculptor, took place in London on the 22d of June. Mr. Noble was a pupil of John Francis; and first gained the attention of the public by his monument to the Duke of Wellington, at Manchester, in 1856. His best-appreciated works were, however, among the latest modelled by his hand; namely, the portrait (full-length) of the late Earl of Derby, in the series of British statesmen adorning Parliament Square, Westminster; and the colossal statue of the Grand Pretender, Cromwell, erected at Manchester, last autumn, at the cost of Mrs. Abel Heywood. A small copy of the last-named work, in bronze, may be seen in the British section of the Centennial Exhibition, where it is shown by Messrs. Cox, of London, bronze-founders, near the centre of the main building. Mr. Noble's rank as a sculptor was not high; and a few minor ideal flights serve to show that his proper sphere was portraiture. In this sphere he came into competition with Royal Academicians, and suffered in consequence; he was forced back upon the expedient of advertising his name by forming committees, and was excluded from the benefit of criticism in prominent art journals. Extreme sensitiveness caused frequent inroads upon his health, and finally killed him at the age of fifty-six.

CEMENT FOR CONCRETE. — The *Builder* recently incorrectly reported a remark of Major Seddon, by saying that "contractors were not alive to the necessity of the cement being fresh burned." What was said was, as Major Seddon explains, that "contractors were not sufficiently alive to the fact that fresh-burned cement will expand in setting, and so lead to cracked and bulging walls, and therefore requires to be exposed to the air to get rid of the heat in it."

TEMPLE OF ÆSCULAPIUS. — In digging lately at the back of the cathedral of Nôtre Dame, Paris, the workmen came upon a monolith, which would tend to prove the existence of a temple dedicated to the God of Medicine. It is probable, that at a very ancient period, there was a temple of Æsculapius on the very site where the present Hôtel Dieu was built. In front of this temple was found part of a column somewhat similar to that which was to be seen before the temple of Epidaurus. This fragment of column was removed in 1748, while the place in front of the cathedral (Parvis Nôtre Dame) was being enlarged; but it has never been seen or heard of since. The sculptured part of the monolith referred to represents Æsculapius, the God of Medicine.

GUNPOWDER EXPLOSIONS. — The *Scientific American* theorizes as to what results would follow the explosion of sixty-five of the one hundred and thirty tons of gunpowder stored on Ellis Island, in New York Harbor. Within a circle of one mile radius, there would be little to suffer but shipping. Reaching the vicinity of the City Hall, the force of the shock would be reduced to less than three pounds per superficial foot, a force strong enough to overthrow all steeples and most of the exceptionally high buildings. At four miles from the explosion, windows and doors would be smashed, ceilings thrown down, and weak buildings injured. Every church within a radius of twenty-five miles would have its walls and ceilings cracked. If the explosion occurred at night, every gaslight in New York, Brooklyn, and Jersey City would be extinguished. The iron water-mains in that part of the city below the City Hall would be ruptured as in other great explosions.

TRANSFERRING WATER-COLOR DRAWINGS TO WOOD. — Mr. Binfield has invented a process for transferring water-color drawings to the woodcutter's block without injury to the original drawings. This is effected by the use of two preparations called Lignotints, which wash and flow freely. When the drawing is finished, it is placed face downwards on the block, and subjected to pressure. This is said to transfer a perfect impression to the block without injuring the original.

THE OLD SOUTH. — The subscriptions for saving the Old South Church come in with increasing rapidity. The time fixed for beginning the demolition has been postponed to July 17.